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SENNIGER POWERS
 ONE METROPOLITAN SQUARE
 16TH FLOOR
 ST LOUIS, MO 63102

EXAMINER

KIM, PAUL

ART UNIT	PAPER NUMBER
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2161

DATE MAILED: 06/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/606,720

Applicant(s)

NEBRES, DIOSDADO L.

Examiner

Paul Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-56 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.


SAM RIMELL
PRIMARY EXAMINER

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is responsive to the following communication: Amendment filed on 7 March 2006.

Response to Amendment

2. Claims 1-56 are pending and present for examination.
3. Claims 1, 25, and 38 are independent.
4. Claims 15-16, 19-22, 34-35, 46, and 51-54 have been amended.
5. No claims have been cancelled.

Drawings

6. As per the objection to the Drawings, Applicant's amendment has been acknowledged. Consequently, the objection has been withdrawn.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. **Claim 15-16, 19-22, 34-35, 46, and 51-54** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
9. **As per claims 15-16, 34-35 and 46**, the claims contain the relative term "substantially" which renders the claim indefinite. The term "substantially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. In Ex parte Oetiker, the phrase "substantial

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portion" was held to be indefinite because the specification lacked some standard for measuring the degree intended and, therefore, properly rejected as indefinite under 35 U.S.C. 112, second paragraph.

Ex parte Oetiker, 23 USPQ2d 1641 (Bd. Pat. App. & Inter. 1992).

10. The phrase "the smallest estimated size" in claims 15, 34, and 46 contain the undefined term "size." The term "size" is not defined by the claim and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The term "size" could relate to a plurality of different table properties such as the number of rows/columns in the table or the memory used by the table. Thus claims 15, 34, and 46 are rejected as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

11. Additionally, line 3 of both claims 16 and 35 recites "one or more attributes and measures." It is unclear whether this is intended to be the same as or different from "one or more attributes and measures" recited in line 2 of the claims.

12. **As per claims 19-22 and 51-54**, the claims contain features which were optionally recited in claims 18 and 50 respectively. Furthermore, Applicant's amendment making said features mandatory to the claimed invention contradict the optional language of the claims upon which claims 19-22 and 51-54 depend. Thus, claims 19-22 and 51-54 are rejected as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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14. **Claims 1, 4-5, 9-10, 24-25, 37-38, 40-41, 47, and 56** are rejected under 35 U.S.C. 102(e) as being anticipated by Lee et al (USPGPUB 2003/0028550 A1, hereinafter referred to as LEE), filed on July 30, 2001, and published on February 6, 2003.

15. Regarding **independent claim 1**, LEE teaches:

A method of generating a customized report from relational data stored in a database, said method comprising:

providing metadata associated with the data in the database, said metadata describing the data according to one or more characteristics of the data {See LEE, Para. 0128, lines 1-2, wherein this reads over "[e]ach of the tables 502a, b, c, d would include workflow related metadata for different defined workflows"};

receiving a request for information from a user {See LEE, Para. 0046, lines 11-16, wherein this reads over "[t]he Workflow class 406 provides methods that allow the user to access information and control an executing workflow. The WorkList class 408 includes methods that allow the user to access an executing worklist object comprised of work items and information"}; and

executing a predefined procedure for retrieving selected data from the database in response to the request for information {See LEE, Para. 0149, lines 6-10, wherein this reads over "A call to one object oriented methods invokes one stored procedure in the buildtime database 500 that executes SQL statements to perform the function associated with the method, e.g., create, update, retrieve, list, delete, etc."}, said procedure constructing a query as a function of the characteristics of the data as described by the metadata for optimizing retrieval of the selected data {See LEE, Para. 0140, lines 1-2, wherein this reads over "Get: includes SQL code to retrieve one or more rows of data"}.

16. Regarding **dependent claims 4 and 40**, LEE teaches:

The method of claim 1 (also computer-readable media of claim 38), further comprising defining a plurality of tables for organizing the metadata relative to the data in the database {See LEE, Para. 0007, lines 1-2, wherein this reads over "[t]he present invention relates to a method, system, and program for maintaining information in database tables"; and Para. 0012, lines 2-3, wherein this reads over "[a]t least one table is provided in a database storing workflow related data"}.

17. Regarding **dependent claims 5 and 41**, LEE teaches:

The method of claim 4 (also computer-readable media of claim 40), wherein one or more of the tables is exposed as a dimension having one or more columns of attributes {See LEE, Para. 0015, lines 4-8, wherein this reads over "[f]or each table for which column definitions are received, a table is generated in the database including one column for each column definition, wherein each column is generated with attributes specified by the column definition for which the column is generated"}.

18. Regarding **dependent claim 9**, LEE teaches:

The method of claim 1, wherein executing the predefined procedure to construct the query includes matching the metadata to search criteria in the request for information {See LEE, Para. 0128, lines 1-2, wherein this reads over "[e]ach of the tables 502a, b, c, d would include workflow related metadata for different defined workflows"; and Para 0140, lines 1-8, wherein this reads over "Get: includes SQL code to retrieve one or more rows of data. For instance, the get method may be used to retrieve on WDL file from the WDL file table 502a and forward such WDL file to the workflow engine 2 as shown and described with respect to FIG. 1. An additional stored procedure may be used to both retrieve and export the WDL file to the workflow engine 2"}.

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19. Regarding **dependent claims 10 and 47**, LEE teaches:

The method of claim 1 (also computer-readable media of claim 38), wherein the query constructed by the predefined procedure comprises one or more SQL statements {See LEE, Para. 0149, lines 6-10, wherein this reads over "A call to one object oriented methods invokes one stored procedure in the buildtime database 500 that executes SQL statements to perform the function associated with the method, e.g., create, update, retrieve, list, delete, etc."}.

20. Regarding **dependent claims 24 and 37**, LEE teaches:

One or more computer-readable media have computer-executable instructions for performing the method of claim 1 (also claim 25) {See LEE, Para. 0151, lines 1-23, wherein this reads over "[t]he term 'article of manufacture' as used herein refers to code or logic implemented in a computer readable medium"}.

21. Regarding **independent claim 25**, LEE teaches:

A method of constructing a query for retrieving selected data from a database in response to a request from a user for information, said method comprising:

defining metadata to describe data in the database according to one or more characteristics of the data {See LEE, Para. 0128, lines 1-2, wherein this reads over "[e]ach of the tables 502a, b, c, d would include workflow related metadata for different defined workflows"};

defining a plurality of tables for organizing the metadata relative to the data, one or more of the tables being exposed as a dimension having at least one column of attributes {See LEE, Para 0015, lines 4-8, wherein this reads over "[f]or each table for which column definitions are received, a table is generated in the database including one column for each column definition, wherein each column is generated with attributes specified by the column definition for which the column is generated"};

comparing search criteria specified by the request for information to the metadata attributes {See LEE, Para. 0128, lines 1-2, wherein this reads over "[e]ach of the tables 502a, b, c, d would include workflow related metadata for different defined workflows"; and Para 0140, lines 1-8, wherein this reads over "Get: includes SQL code to retrieve one or more rows of data. For instance, the get method may be used to retrieve on WDL file from the WDL file table 502a and forward such WDL file to the workflow engine 2 as shown and described with respect to FIG. 1. An additional stored procedure may be used to both retrieve and export the WDL file to the workflow engine 2"}; and

executing a predefined procedure in response to the request for information, said procedure generating a set of structured query language (SQL) {See LEE, Para. 0149, lines 6-10, wherein this reads over "A call to one object oriented methods invokes one stored procedure in the buildtime database 500 that executes SQL statements to perform the function associated with the method, e.g., create, update, retrieve, list, delete, etc."}.

22. Regarding **independent claim 38**, LEE teaches:

One or more computer-readable media having computer-executable components for generating a report from data stored in a database, said computer-readable media comprising:

a metadata component for describing the data in the database according to one or more characteristics of the data {See LEE, Para. 0128, lines 1-2, wherein this reads over "[e]ach of the tables 502a, b, c, d would include workflow related metadata for different defined workflows"};

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an interface component for receiving a request for information from a user {See LEE, Para. 0046, lines 11-16, wherein this reads over "[t]he Workflow class 406 provides methods that allow the user to access information and control an executing workflow. The WorkList class 408 includes methods that allow the user to access an executing worklist object comprised of work items and information"}; and

a procedure component responsive to the request for information for constructing a query to retrieve selected data from the database {See LEE, Para. 0149, lines 6-10, wherein this reads over "A call to one object oriented methods invokes one stored procedure in the buildtime database 500 that executes SQL statements to perform the function associated with the method, e.g., create, update, retrieve, list, delete, etc."}, said procedure component constructing the query as a function of the characteristics of the data as described by the metadata component for optimizing retrieval of the selected data {See LEE, Para. 0140, lines 1-2, wherein this reads over "Get: includes SQL code to retrieve one or more rows of data"}.

23. Regarding **dependent claim 56**, LEE teaches:

The computer-readable media of claim 38, wherein the interface component comprises an application programming interface {See LEE, claim 1, wherein this reads over "a plurality of programming interface, wherein each programming interface specifies an operation to perform"}.

Claim Rejections - 35 USC § 103

24. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

25. **Claims 2-3, 6-8, 11, 13, 26-30, 32, 39, 42, 44-45, and 48** are rejected under 35 U.S.C.

103(a) as being unpatentable over LEE, as applied to claims 1, 4-5, 9-10, 24-25, 37-38, 40-41, 47, and 56 above, in view of Fayyad et al (US Patent No. 6,549,907, hereinafter referred to as FAYYAD), filed on April 22, 1999, and issued on April 15, 2003.

LEE teaches the limitations of claims 1, 4-5, 9-10, 24-25, 37-38, 40-41, 47, and 56 for the reasons stated above.

LEE differs from the claimed invention in that LEE does not disclose a method which generates a report in response to a query including selected data retrieved from the database when the procedure is executed (claims 2 and 26).

LEE differs from the claimed invention in that LEE does not disclose a method (also computer-readable media) wherein the user specified a format for the report, search criteria, or both (claims 3 and 39).

LEE differs from the claimed invention in that LEE does not disclose a method (also computer-readable media) which creates a structured query language (SQL) view for each of the tables to be exposed as a dimension (claims 6, 27, and 42).

LEE differs from the claimed invention in that LEE does not disclose a method (also computer-readable media) which includes, for each fact, a fact view to expose attributes and measures for querying (claims 7, 28, and 44).

LEE differs from the claimed invention in that LEE does not disclose a table (also computer-readable media) which contains metadata associated with an attribute, a dimension, a measure, or a fact (claims 8, 29, and 45).

LEE differs from the claimed invention in that LEE does not disclose a method wherein the metadata further comprises of defining measures and associating the defined measures to applicable facts (claims 11 and 30).

LEE differs from the claimed invention in that LEE does not disclose a method which defines a query syntax according to which the request for information identifies search criteria for the selected data (claims 13, 32, and 48).

26. Regarding **dependent claims 2 and 26**, LEE, in combination with FAYYAD, discloses a method (also computer-readable media) which generates a report in response to a query including selected data retrieved from the database {See FAYYAD, col. 1, lines 22-24, wherein this reads over "[a]n important aid to the users making decisions based on data in the database is the ability to generate reports based on aggregates"} when the procedure is executed.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the above invention suggested by LEE by combining it with the invention disclosed by FAYYAD. The results of this combination would lead to a method (also computer-readable media)

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which generates a report in response to a query including selected data retrieved from the database when the procedure is executed.

One of ordinary skill in the art would have been motivated to do this modification in order to generate a report including the retrieved selected data in response to the request for information by a user.

27. Regarding **dependent claims 3 and 39**, LEE, in combination with FAYYAD, discloses a method wherein the user specified a format for the report, search criteria, or both {See FAYYAD, col. 1, lines 22-47, wherein this reads over "users can specify ranges in different dimensions if they need to view data in more detail"}.

The combination of the inventions disclosed in LEE and FAYYAD would allow for the generation of a report which would include data retrieved in response to a user's request for information. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the above invention suggested by LEE by combining it with the invention disclosed by FAYYAD. The results of this combination would lead to a method wherein the user specified a format for the report.

One of ordinary skill in the art would have been motivated to do this modification in order to generate a report which may specifically customized by the user.

28. Regarding **dependent claims 6, 27, and 42**, LEE, in combination with FAYYAD, discloses a method (also computer-readable media) which creates a structure query language (SQL) {See FAYYAD, col. 2, lines 10-14, wherein this reads over "Transact SQL provides two special operators . . . that allow multidimensional analysis to be projected by the database server"} view for each of the tables to be exposed as a dimension {See FAYYAD, col. 1, lines 34-37, wherein this reads over "[a] desirable view of the data in a database is to provide a multidimensional view"}.

The combination of the inventions disclosed in LEE and FAYYAD would allow for the creation of a SQL view for each of the tables to be exposed as a dimension. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the above invention suggested by LEE by combining it with the invention disclosed by FAYYAD.

One of ordinary skill in the art would have been motivated to do this modification in order to describe the related dimensions, attributes, measures, and/or facts in the data warehouse.

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29. Regarding **dependent claims 7, 28, and 44**, LEE, in combination with FAYYAD, discloses a method (also computer-readable media) which creates, for each fact, a fact view {See FAYYAD, col. 1, lines 33-35, wherein this reads over "[a] desirable view of the data in a database is to provide a multidimensional view"} to expose attributes and measures for querying {See FAYYAD, col. 1, lines 36-38, wherein this reads over "cells inside the cube represent all possible combinations of attribute values, along with associated aggregation measures"}.

The combination of the inventions disclosed in LEE and FAYYAD would allow for the creation of a fact view which displays attributes and measures for each related fact. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the above invention suggested by LEE by combining it with the invention disclosed by FAYYAD.

One of ordinary skill in the art would have been motivated to do this modification so that the related attributes and measures would be readily accessible for querying.

30. Regarding **dependent claims 8, 29, and 45**, LEE, in combination with FAYYAD, discloses a method (also computer-readable media) which contains metadata {See LEE, Para. 0128, lines 1-2, wherein this reads over "[e]ach of the tables 502a, b, c, d would include workflow related metadata for different defined workflows"} associated with an attribute, a dimension, a measure, or a fact {See FAYYAD, col. 1, lines 35-38, wherein this reads over "attributes are treated as dimensions, and cells inside the cube represent all possible combinations of attribute values, along with associated aggregation measures"}.

The combination of the inventions disclosed in LEE and FAYYAD would allow for a method which contains metadata associated with an attribute, a dimension, a measure, or a fact. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the above invention suggested by LEE by combining it with the invention disclosed by FAYYAD.

One of ordinary skill in the art would have been motivated to do this modification so that data in the database may be accessed by referencing metadata related to the data.

31. Regarding **dependent claims 11 and 30**, LEE, in combination with FAYYAD, discloses a method wherein the metadata {See LEE, Para. 0128, lines 1-2, wherein this reads over "[e]ach of the tables 502a, b, c, d would include workflow related metadata for different defined workflows"} further comprises of defining measures and

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associating the defined measures to applicable facts {See FAYYAD, col. 1, lines 36-38, wherein this reads over "cells inside the cube represent all possible combinations of attribute values, along with associated aggregation measures"}.

The combination of the inventions disclosed in LEE and FAYYAD would allow for a method wherein the metadata further comprises of defining measures and associating the defined measures to applicable facts. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the above invention suggested by LEE by combining it with the invention disclosed by FAYYAD.

One of ordinary skill in the art would have been motivated to do this modification so that data in the database may be accessed by referencing metadata related to the defined measures.

32. Regarding **dependent claims 13, 32 and 48**, LEE, in combination with FAYYAD, discloses a method which defines a query syntax according to which the request for information identifies search criteria for the selected data {See FAYYAD, col. 1, lines 28-31, wherein this reads over "a query that finds the average number of years of employment of employees who have a salary greater than 100,000 dollars"}.

The combination of the inventions disclosed in LEE and FAYYAD would allow for a method which defines a query syntax according to a search criteria identifying information requested by a user. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the above invention suggested by LEE by combining it with the invention disclosed by FAYYAD.

One of ordinary skill in the art would have been motivated to do this modification so that a query, relating to a search criteria identifying information requested by a user, may be defined.

33. **Claims 12 and 31** are rejected under 35 U.S.C. 103(a) as being unpatentable over LEE, as applied to claims 1, 4-5, 9-10, 24-25, 37-38, 40-41, 47, and 56 above, in view of Diamond (U.S. Patent No. 6,269,368, hereinafter referred to as DIAMOND), filed on October 16, 1998, and issued on July 31, 2001.

LEE teaches the limitations of claims 1, 4-5, 9-10, 24-25, 37-38, 40-41, 47, and 56.

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LEE differs from the claimed invention in that LEE does not disclose a method which generates a SQL view to display information relating to the query constructed by the predefined procedure (claims 12 and 31).

34. Regarding **dependent claims 12 and 31**, LEE, in combination with DIAMOND, discloses a method which generates a SQL view to display information relating to the query constructed by the predefined procedure {See DIAMOND, col. 2, lines 56-58, wherein this reads over "the system displays query information to the user, indicating the system's interpretation and representation of the content of the query"}.

The combination of the inventions disclosed in LEE and DIAMOND would for a method which generates a SQL view to display information relating to the query constructed by the predefined procedure. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the above invention suggested by LEE by combining it with the invention disclosed by DIAMOND.

One of ordinary skill in the art would have been motivated to do this modification in order to describe the related dimensions, attributes, measures, and/or facts in the data warehouse.

35. **Claims 14-16, 33-35, and 46** are rejected under 35 U.S.C. 103(a) as being unpatentable over LEE, as applied to claims 1, 4-5, 9-10, 24-25, 37-38, 40-41, 47, and 56 above, in view of FAYYAD as applied to claims 2-3, 6-8, 26-29, 32, 39, 42, and 44-45 above, and in further view of Quernemoen (U.S. Patent No. 6,542,893, hereinafter referred to as QUERNEMOEN), filed on February 29, 2000, and issued on April 1, 2003.

LEE teaches the limitations of claims 1, 4-5, 9-10, 24-25, 37-38, 40-41, 47, and 56 for the reasons stated above.

FAYYAD teaches the limitations of claims 2-3, 6-8, 11, 13, 26-30, 32, 39, 42, 44-45, and 48.

LEE differs from the claimed invention in that LEE does not disclose a method which defines a plurality of tables for organizing the metadata relative to the data in the database and estimating a size of each of the tables (claims 14 and 33).

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LEE differs from the claimed invention in that LEE does not disclose a method which compares the search criteria in the request for information to the metadata and determines which of the tables matches at least substantially the search criteria, and wherein the procedure constructs the query based on the matched table having the smallest estimated size (claims 15, 34, and 46).

LEE differs from the claimed invention in that LEE does not disclose a method which determines which of the tables comprises of tables which contain metadata associated with the attributes and measures of data (claims 16 and 35).

36. Regarding **dependent claims 14 and 33**, LEE, in combination with FAYYAD and QUERNEMOEN, discloses a method which defines a plurality of tables {See LEE, Para. 0012, lines 2-3, wherein this reads over "at least one table is provided in a database storing workflow related data"} for organizing the metadata {See LEE, Para. 0128, lines 1-2, wherein this reads over "[e]ach of the tables 502a, b, c, d would include workflow related metadata for different defined workflows"} relative to the data in the database and estimating a size of each of the tables {See QUERNEMOEN, col. 2, lines 43-49, wherein this reads over "providing inputs for tables in the database sufficient to calculate the estimated size for the database including the number of tables, the amount of data, the average number of columns per row, the average row size"}.

The combination of the inventions disclosed in LEE, FAYYAD, and QUERNEMOEN would allow for a method which defines a plurality of tables for organizing the metadata relative to the data in the database and estimating a size of each of the tables. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the above invention suggested by LEE by combining it with the inventions disclosed by FAYYAD and QUERNEMOEN.

One of ordinary skill in the art would have been motivated to do this modification to facilitate in the organizing and defining of metadata.

37. Regarding **dependent claims 15, 34, and 46**, LEE, in combination with FAYYAD and QUERNEMOEN, discloses a method which compares the search criteria in the request for information to the metadata and determines which of the tables substantially matches ~~at least substantially~~ the search criteria {See FAYYAD, col. 1, lines 28-31, wherein this reads over "a query that finds the average number of years of employment

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of employees who have a salary grater than 100,000 dollars"}, and wherein the procedure constructs the query based on the matched table having the smallest estimated size {See QUERNEMOEN, col. 2, lines 43-49, wherein this reads over "providing inputs for tables in the database sufficient to calculate the estimated size for the database including the number of tables, the amount of data, the average number of columns per row, the average row size"}.

The combination of the inventions disclosed in LEE, FAYYAD, and QUERNEMOEN would allow for a method which compares the search criteria in the request for information to the metadata and determines which of the tables matches at least substantially the search criteria, and wherein the procedure constructs the query based on the matched table having the smallest estimated size. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the above invention suggested by LEE by combining it with the inventions disclosed by FAYYAD and QUERNEMOEN.

One of ordinary skill in the art would have been motivated to do this modification to improve query performance in the comparison of the search criteria in the request for information to the metadata.

38. Regarding **dependent claims 16 and 35**, LEE, in combination with FAYYAD and QUERNEMOEN, discloses:

The method of claim 15,

wherein each table contains metadata associated with one or more attributes and measures {See LEE, Para. [0128], wherein this reads over "[e]ach of the tables 502a, b, c, d would include workflow related metadata for different defined workflows"};

wherein the search criteria specifies one or more attributes and measures {See FAYYAD, col. 1, lines 28-31, wherein this reads over "a query that finds the average number of years of employment of employees who have a salary greater than 100,000 dollars"}; and

wherein the determining which of the tables substantially matches the search criteria comprises identifying which of the tables which contains metadata associated with at least substantially all of the attributes and measures {See LEE, Para. 0007, lines 1-2, wherein this reads over "[t]he present invention relates to a method, system, and program for maintaining information in database tables"; and Para. 0012, lines 2-3, wherein this reads over "[a]t least one table is provided in a database storing workflow related data"; and Para. 0128, lines 1-2, wherein this reads over "[e]ach of the tables 502a, b, c, d would include workflow related metadata for different defined workflows"} specified in the search criteria {See FAYYAD, col. 1, lines 28-31, wherein this reads over "a query that finds the average number of years of employment of employees who have a salary greater than 100,000 dollars"}.

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The combination of the inventions disclosed in LEE, FAYYAD, and QUERNEMOEN would allow for a method which determines which of the tables comprise of tables which contain metadata associated with the attributes and measures data specified in the search criteria. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the above invention suggested by LEE by combining it with the inventions disclosed by FAYYAD and QUERNEMOEN.

One of ordinary skill in the art would have been motivated to do this modification so that the query may properly access the table containing the metadata related to the request for information.

39. **Claims 17 and 49** are rejected under 35 U.S.C. 103(a) as being unpatentable over LEE, as applied to claims 1, 4-5, 9-10, 24-25, 37-38, 40-41, 47, and 56 above, in view of Lei et al (USPGPUB 2004/0139043, hereinafter referred to as LEI), filed on January 13, 2003, and issued on July 15, 2004.

LEE teaches the limitations of claims 1, 4-5, 9-10, 24-25, 37-38, 40-41, 47, and 56 for the reasons stated above.

LEE differs from the claimed invention in that LEE does not disclose a method wherein the request for information according to the query syntax comprises of one or more delimited lists (claims 17 and 49).

40. Regarding **dependent claims 17 and 49**, LEE, in combination with LEI, discloses a method wherein the request for information according to the query syntax comprises one or more delimited lists (See LEI, Paras. 0035-0038, wherein this reads over "the general syntax of a query is: SELECT (attribute list) from (table list) where (filter list); and Para. 0039, wherein this reads over "the table list indicates the tables from which data is being requested").

The combination of the inventions disclosed in LEE and LEI would allow for a method wherein the request for information according to the query syntax comprises of the attribute list, table list, and filter list. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the above invention suggested by LEE by combining it with the invention disclosed by LEI.

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One of ordinary skill in the art would have been motivated to do this modification so that the query may properly access and retrieve the requested information.

41. **Claims 18-22, 36, and 50-54** are rejected under 35 U.S.C. 103(a) as being unpatentable over LEE, as applied to claims 1, 4-5, 9-10, 24-25, 37-38, 40-41, 47, and 56 above, in view of Listou (U.S. Patent No. 6,134,564, hereinafter referred to as LISTOU), filed on June 4, 1999, and issued on October 17, 2000.

LEE teaches the limitations of claims 1, 4-5, 9-10, 24-25, 37-38, 40-41, 47, and 56 for the reasons stated above.

LEE differs from the claimed invention in that LEE does not disclose a method wherein the request for information according to the query syntax includes a user-selected input representative of a sort order parameter (claims 18, 36, and 50).

42. Regarding **dependent claims 18, 36, and 50**, LEE, in combination with LISTOU, discloses a method (also computer-readable media) wherein the request for information according to the query syntax includes a user-selected input representative of a sort order parameter (See LISTOU, col. 9, lines 14-15, wherein this reads over "[t]he user specifies the desired sort order, by parameter, in Sort dialog box"). Furthermore, because the other parameters (e.g. "column list parameter," "slice parameter," "fact-type parameter," "crosstab result parameter," and "options parameter") were optionally recited within the claim, they do not carry any patentable weight.

The combination of the inventions disclosed in LEE and LISTOU would allow the user to select an input representative of a sort order parameter in the request for information. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the above invention suggested by LEE by combining it with the invention disclosed by LISTOU.

One of ordinary skill in the art would have been motivated to do this modification so that the retrieved data may be categorized, sorted, or parsed accordingly.

43. **Dependent claims 19-22** are rejected because they do not carry any patentable weight.

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Claim 19 refers to "column list parameter," a feature that is not positively recited in claim 18.

Claim 20 refers to "slice parameter," a feature that is not positively recited in claim 18.

Claim 21 refers to "slice parameter," a feature that is not positively recited in claim 18.

Claim 22 refers to "options parameter," a feature that is not positively recited in claim 18.

44. **Dependent claims 51-54** are rejected because they do not carry any patentable weight.

Claim 51 refers to "column list parameter," a feature that is not positively recited in claim 50.

Claim 52 refers to "slice parameter," a feature that is not positively recited in claim 50.

Claim 53 refers to "slice parameter," a feature that is not positively recited in claim 50.

Claim 54 refers to "options parameter," a feature that is not positively recited in claim 50.

45. **Claims 23 and 55** are rejected under 35 U.S.C. 103(a) as being unpatentable over LEE, as applied to claims 1, 4-5, 9-10, 24-25, 37-38, 40-41, 47, and 56 above, in view of Owens et al (U.S. Patent No. 6,047,284, hereinafter referred to as OWENS), filed on May 14, 1997, and issued on April 4, 2000.

LEE teaches the limitations of claims 1, 4-5, 9-10, 24-25, 37-38, 40-41, 47, and 56 for the reasons stated above.

LEE differs from the claimed invention in that LEE does not disclose a method wherein the predefined procedure comprises a template for generating a set of SQL statements for implementing the query (claims 23 and 55).

46. Regarding **dependent claim 23 and 55**, LEE, in combination with OWENS, discloses a method (also computer-readable media) wherein the predefined procedure comprises a template for generating a set of SQL statements {See OWENS, col. 12, lines 40-41, wherein this reads over "[t]he query template contains a query with gaps that are filled in by the args array and results array"} for implementing the query {See OWENS, col. 13, lines 20-21, wherein this reads over "[t]he query template is an SQL-like query that includes object-oriented information"}.

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The combination of the inventions disclosed in LEE and OWENS would allow the predefined procedure to generate a set of SQL statements for implementing the query. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the above invention suggested by LEE by combining it with the invention disclosed by OWENS.

One of ordinary skill in the art would have been motivated to do this modification because SQL statements are commonly used for implementing queries.

47. **Claim 43 is** rejected under 35 U.S.C. 103(a) as being unpatentable over LEE, as applied to claims 1, 4-5, 9-10, 24-25, 37-38, 40-41, 47, and 56 above, in view of Anand et al (U.S. Patent No. 5,692,181, hereinafter referred to as ANAND), filed on October, 12, 1995, and issued on November 25, 1997.

LEE teaches the limitations of claims 1, 4-5, 9-10, 24-25, and 38 for the reasons stated above.

LEE differs from the claimed invention in that LEE does not disclose a computer-readable media wherein the metadata component automatically populates the metadata through the SQL view (claim 43).

48. **Claim 43 is** rejected under 35 U.S.C. 103(a) as being unpatentable over LEE, as applied to claims 1, 4-5, 9-10, 24-25, 37-38, 40-41, 47, and 56 above, in view of Anand et al (U.S. Patent No. 5,692,181, hereinafter referred to as ANAND), filed on October, 12, 1995, and issued on November 25, 1997.

49. Regarding **dependent claim 43**, LEE, in combination with ANAND, discloses a computer-readable media wherein the metadata component automatically populates the metadata through the SQL view {See ANAND, col. 10, lines 51-55, wherein this reads over "as all of the metadata 25 in metadata repository 76, must be mapped into relational form (that is, into SQL) in order to actually query data warehouse"; and col. 14, lines 25-27, wherein this reads over "[m]etadata load and update module 78 populates metadata repository 76 from the persistent metadata stored in data warehouse 24 upon system startup"}.

The combination of the inventions disclosed in LEE and ANAND would allow the metadata component to automatically populate the metadata upon system startup by mapping the metadata into

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relational form, or SQL. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the above invention suggested by LEE by combining it with the invention disclosed by ANAND.

One of ordinary skill in the art would have been motivated to do this modification so that the metadata tables may be used with attributes and measures for querying.

Response to Arguments

50. Applicant's arguments filed 7 March 2006 have been fully considered but they are not persuasive.

Applicant's Arguments:

a. 35 U.S.C. § 112 Rejections

As per dependent claims 15-16, 34-35, and 46, Applicant argues that because Applicant discloses a standard for ascertaining the requisite degree definiteness, the term "substantially" is not indefinite to one of ordinary skill in the art (Arguments, pages 15-16). Additionally, Applicant argues that the phrase "smallest estimated size" is not indefinite because "the procedure will construct a query based (sic) the table having the smallest estimate size relative to the other matched tables" (Arguments, page 17).

b. 35 U.S.C. § 102 Rejections

As per independent claims 1, 25, and 38, Applicant argues that Lee fails to teach the method of optimizing the retrieval of data from the database as a function of the metadata.

c. 35 U.S.C. § 103 Rejections

As per dependent claims 2, 3, 6-8, 11, 13, 26-30, 32, 39, 42, 44, 45, and 48, Applicant argues that Lee et al. in view of Fayyad et al fails to cure the deficiencies of the primary reference.

As per dependent claims 12 and 31, Applicant argues that Lee et al. in view of Diamond fails to cure the deficiencies of the primary reference.

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As per dependent claims 14-16, 33-35, and 46, Applicant argues that Lee et al. in view of Fayyad, and in further view of Quernemoen fails to cure the deficiencies of the primary reference.

As per dependent claims 17 and 49, Applicant argues that Lee et al. in view of Lei et al fails to cure the deficiencies of the primary reference.

As per dependent claims 18-22, 36, and 50-54, Applicant argues that Lee et al. in view of Listou fails to cure the deficiencies of the primary reference.

As per dependent claims 23 and 55, Applicant argues that Lee et al. in view of Owens et al fails to cure the deficiencies of the primary reference.

As per dependent claim 43, Applicant argues that Lee et al. in view of Anand et al. fails to cure the deficiencies of the primary reference.

Response to Arguments:

a. 35 U.S.C. § 112 Rejections

Regarding Applicant's argument that the term "substantially" is not indefinite to one of ordinary skilled in the art, and while the use of a relative term, such as "substantially" does not automatically render a claim indefinite, the use of the term "substantially" in light of both the claims and the specification still presents a situation wherein the related claims are indefinite. One of ordinary skill in the art would not be able to specifically ascertain the level of matching necessary to fulfill the "substantially match[ing]" requirement. Applicant further presents an example wherein Applicant claims to disclose a standard for ascertaining the requisite degree definiteness:

"... [p]rocedure component 162 takes the inputs, matches them with metadata layer 164, and constructs a set of SQL statements to retrieve data from database 172 in an efficient manner" (Arguments, page 16).

However, even in light of the above embodiment, one of ordinary skill in the art would not be able to specifically ascertain the level of "substantial" matching necessary to meet the requisite matching level so that the procedure component could construct a set of SQL

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statements. That is, one of ordinary skill in the art could interpret "substantial" matching to be any level which fell within the range of 0%-100% matching between the input and metadata.

Additionally, regarding Applicant's argument that Applicant is only required to provide a reasonable degree of particularity and distinctness of the term "size," one of ordinary skill in the art would not be able to specifically ascertain what the term "size" was referring to in the table. The "size" of a table may be directed to the number of rows and/or columns, the memory space the table occupied, or the number of entries within the table. Therefore, one of ordinary skill in the art could not reasonably be apprised on the scope of the invention.

For the reasons stated above, the rejections of claims 15-16, 34-36, and 36 are sustained.

b. 35 U.S.C. § 102 Rejections

Regarding Applicant's argument that Lee fails to teach the method of optimizing the retrieval of data from the database as a function of the metadata, Applicant asserts that Lee et al. teaches that the procedures may be generated "in response to user input specifying the column definitions" (Arguments, page 17). Generally, "metadata" is considered to be "[d]ata describes other data" {See The Authoritative Dictionary of IEEE Standard Terms, Seventh Edition}, which would prompt one of ordinary skill in the art to consider "column definitions," which define the content contained with the related columns, to constitute "metadata." Furthermore, even assuming *arguendo* that "table characteristics" do not constitute "metadata," Lee et al. teaches that "[e]ach of the tables 502a, b, c, d would include workflow related metadata for different defined workflows" and that "the described implementations provide techniques for storing . . . other workflow related metadata" {See LEE, Paras. [0128] and [0149]}.

Additionally, while Applicant argues that "Lee et al. fail to teach or suggest that the procedure generates or constructs a query that optimizes the retrieval of data from the database as a function of the *metadata* as recited by the claim 1" (Arguments, page 18, emphasis added),

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claim 1 specifically reads as "said procedure constructing a query as *a function of the characteristics of the data* as described by the metadata" (emphasis added). Therefore, claim 1 recites a method wherein a query is constructed as a function of the characteristics of the data, and not of the metadata per se since metadata, while describing characteristics of data, is not claimed, as interpreted and construed, to be part of the function. Furthermore, even assuming *arguendo* that the query is constructed as a function of metadata, Lee et al. teaches "an associated stored procedure that includes a plurality of SQL statements to perform the function specified by the method on the particular table" wherein the table "would include workflow related metadata for different defined workflows" {See LEE, Paras. [0143] and [0128]}. Lee et al. would have anticipated the claimed invention by teaching or suggesting each and every element of the noted claims. Therefore, for the reasons stated above, the rejections of claims 1, 25, and 38 are sustained.

c. 35 U.S.C. § 103 Rejections

Applicant has not asserted any other specific arguments, aside from the argument that the cited art fails to cure the deficiencies of Lee et al, for consideration. Appropriately, for the reasons stated above in the rejections of claims 1, 25, and 38, the 35 U.S.C. § 103 rejections are sustained.

As per dependent claims 19-22 and 51-54, Applicant argues that the claims as amended refer to features that are positively recited in the claims. However, where the claimed features are optionally recited in the claims upon which the dependent claims depend, said features remain optionally recited and are not overcome by the claims as amended. Appropriately, for the reasons stated herein and above, the rejections of claims 19-22 and 51-54 are sustained.

Conclusion

51. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

52. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Kim whose telephone number is (571) 272-2737. The examiner can normally be reached on M-F, 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin can be reached on (571) 272-4146. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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